

*As concl*  
a first cladding layer having said first conductivity type, said first cladding layer being formed on said buffer layer epitaxially;

an active layer formed epitaxially on said first cladding layer;

a second cladding layer having a second, opposite conductivity type, said second cladding layer being formed on said active layer epitaxially;

a first electrode provided so as to inject first-type carriers having a first polarity into said second cladding layer; and

a second electrode provided on a bottom surface of said substrate so as to inject second-type carriers having a second polarity,

said buffer layer containing said first type carriers with a concentration level in the range from  $3 \times 10^{18} \text{cm}^{-3}$  to  $1 \times 10^{20} \text{cm}^{-3}$  and said compositional parameter  $x$  larger than 0 but smaller than 0.4 ( $0 < x < 0.4$ ).

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